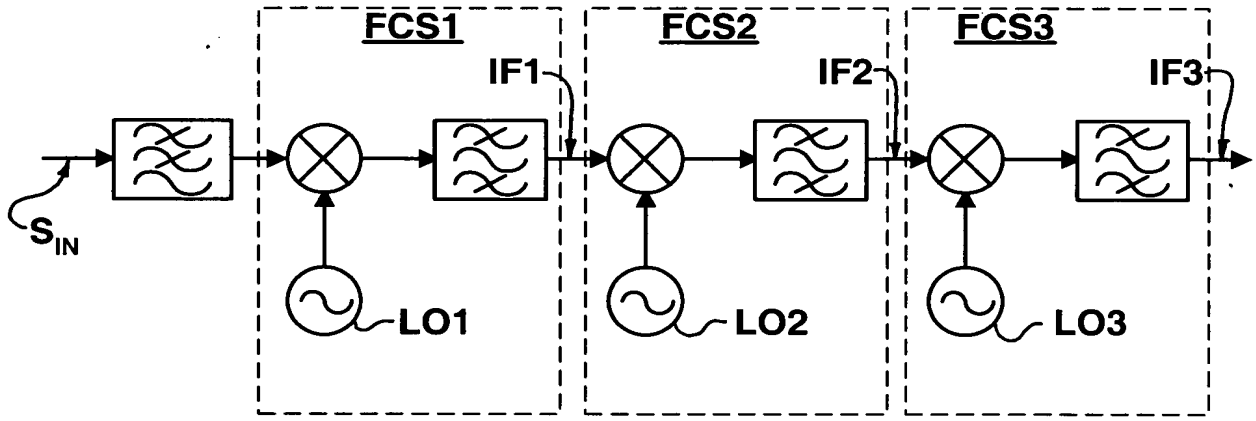

FIGURE 1

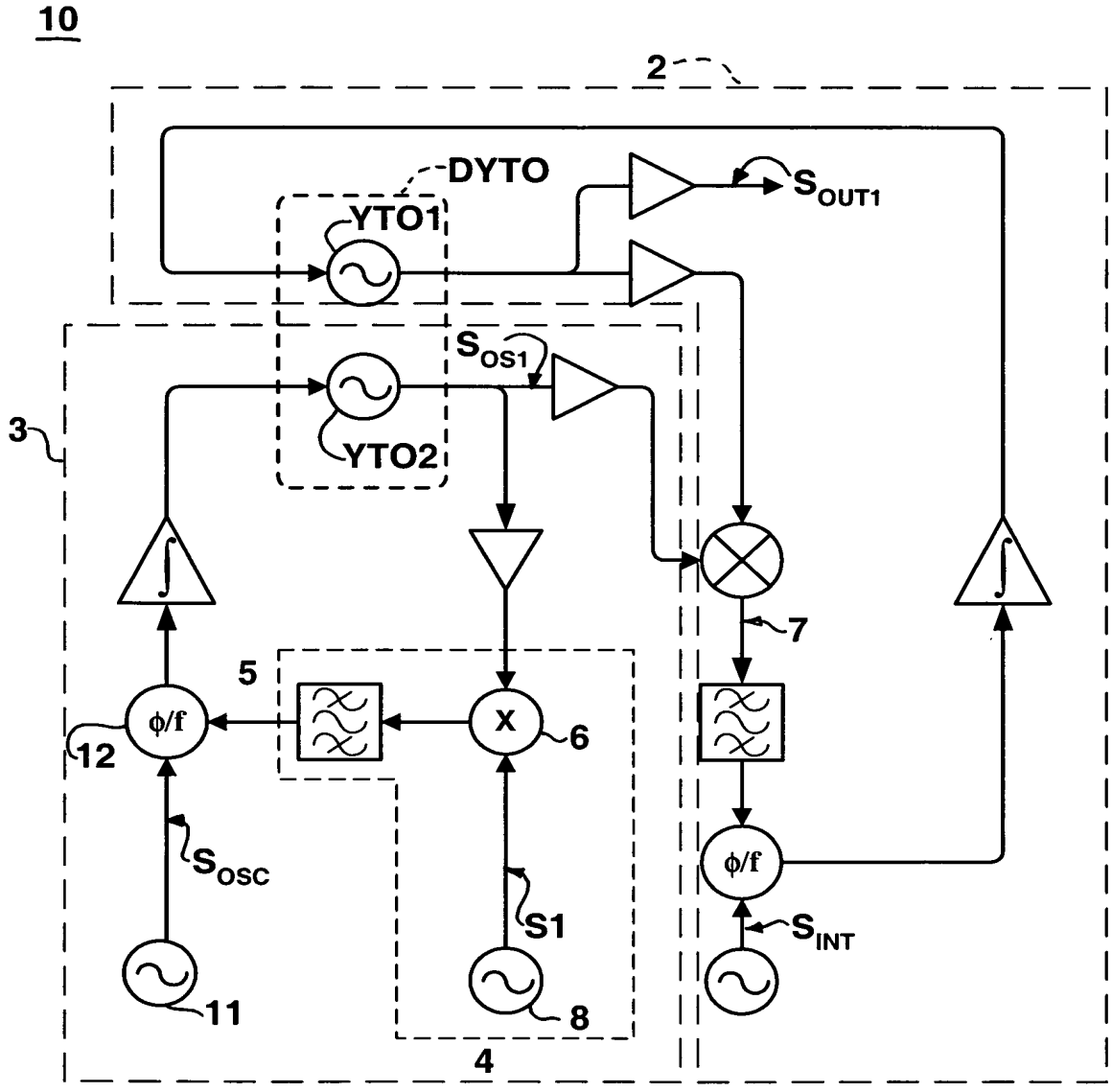

FIGURE 2

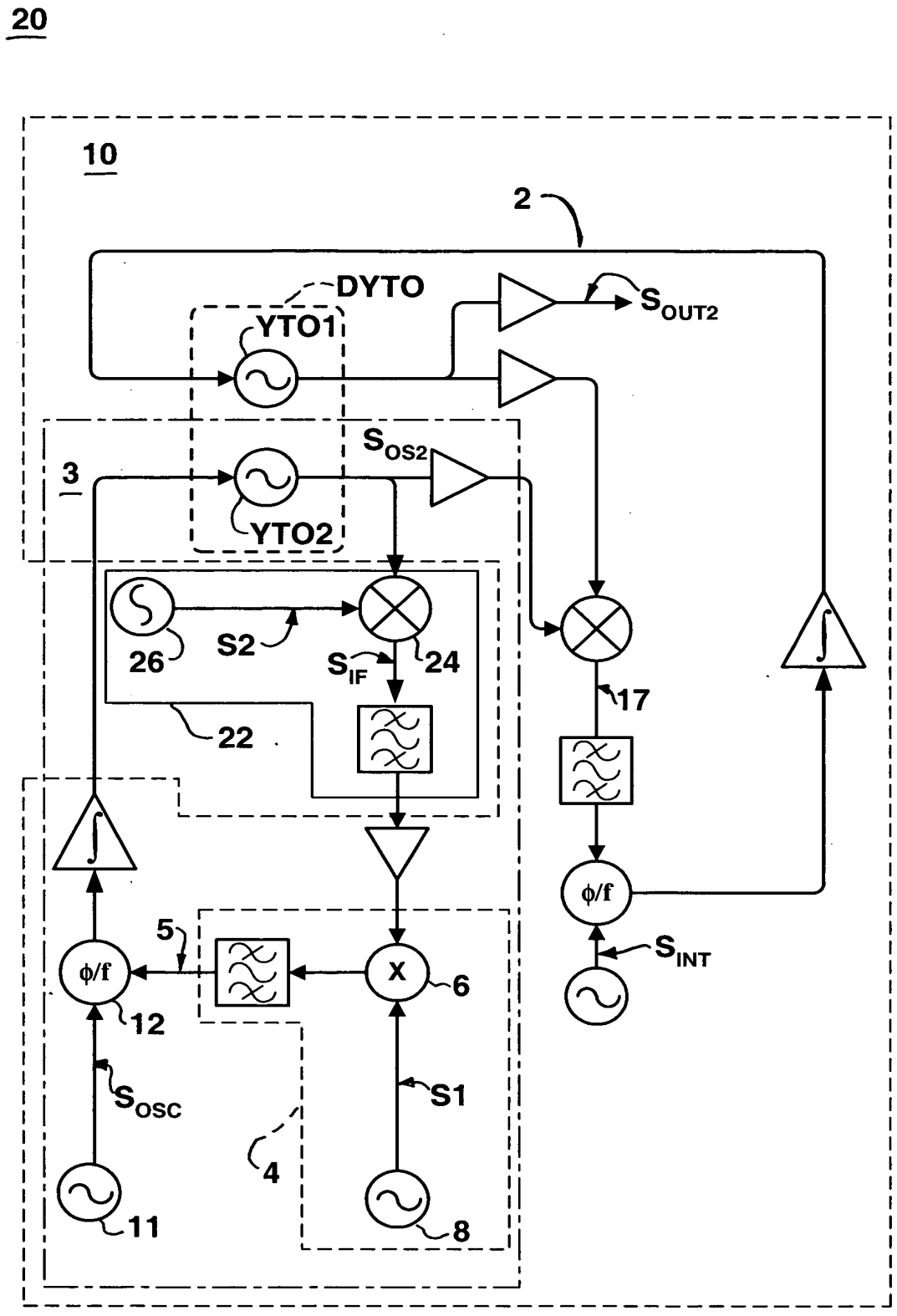
20
10
2
DYTO
YTO1
S_{OUT2}
S_{OS2}
3
YTO2
26
S2
S_{IF}
24
22
17
ϕ/f
S_{INT}
5
ϕ/f
X
6
12
S_{OSC}
S1
4
11
8

FIGURE 3

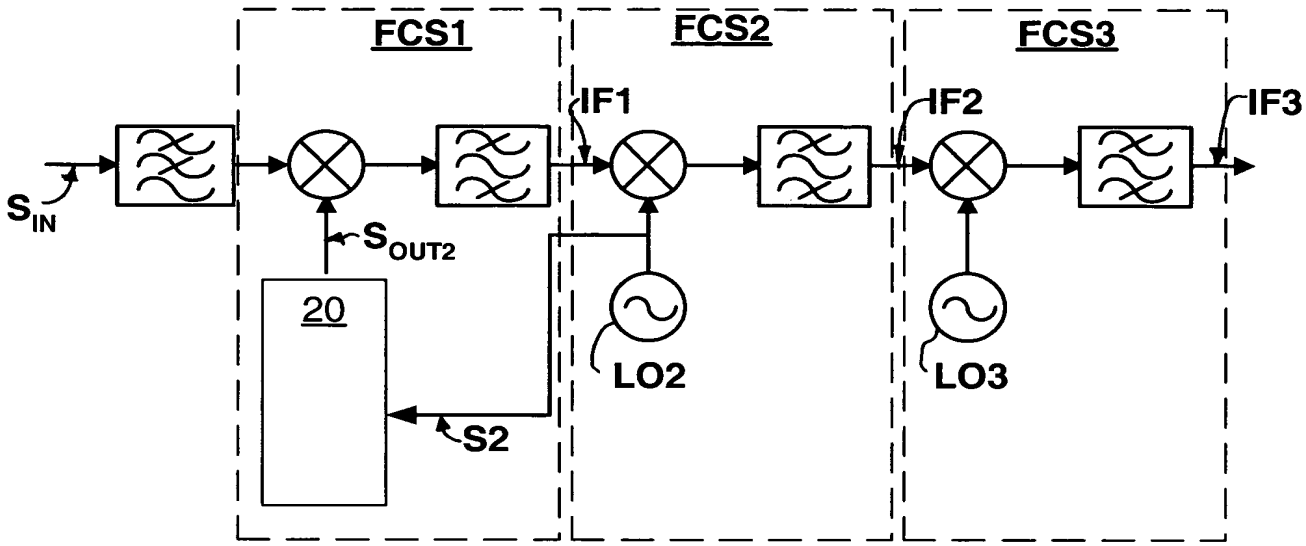

FIGURE 4

30

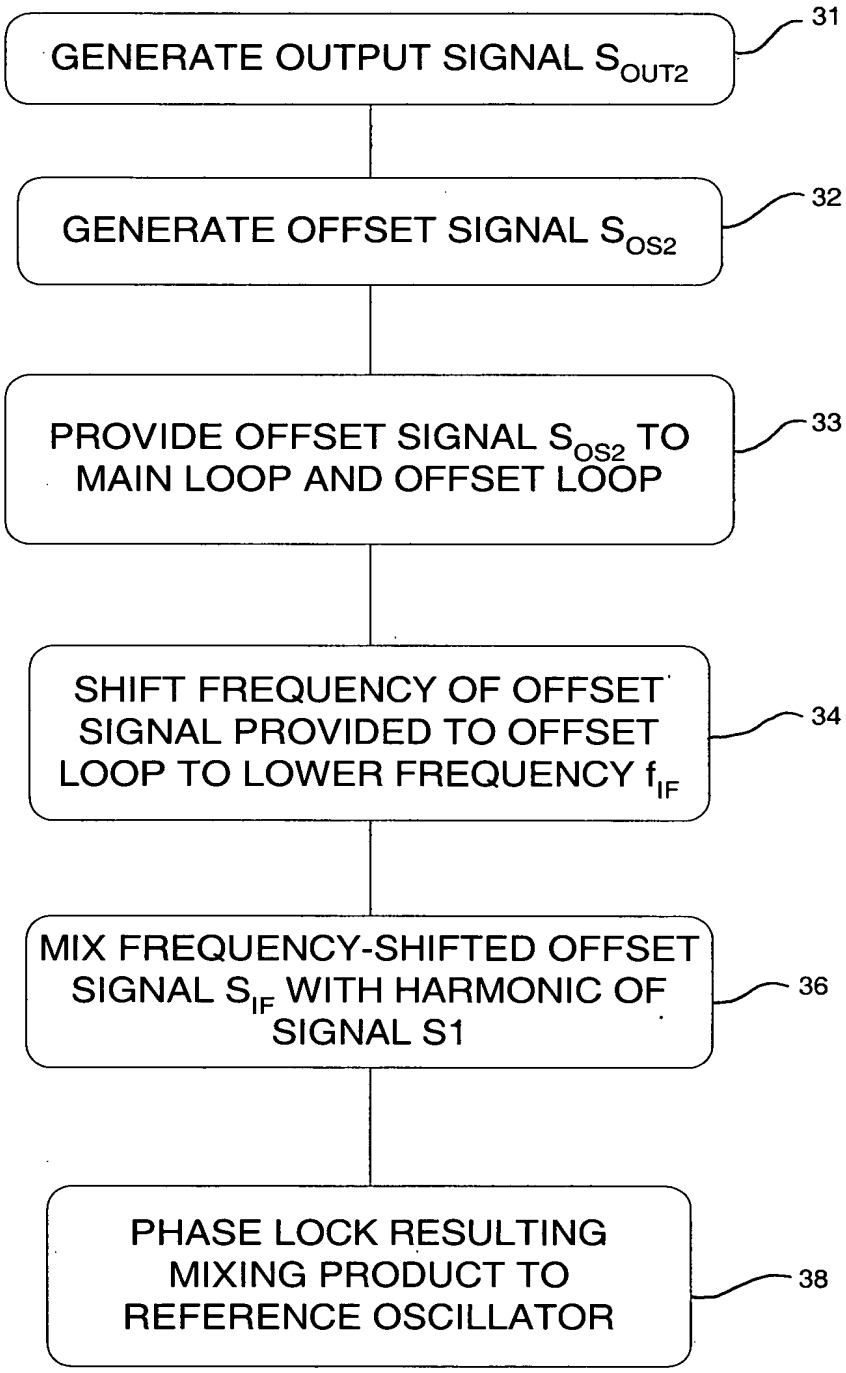
GENERATE OUTPUT SIGNAL S_{OUT2}
31
GENERATE OFFSET SIGNAL S_{OS2}
32
PROVIDE OFFSET SIGNAL S_{OS2} TO MAIN LOOP AND OFFSET LOOP
33
SHIFT FREQUENCY OF OFFSET SIGNAL PROVIDED TO OFFSET LOOP TO LOWER FREQUENCY f_{IF}
34
MIX FREQUENCY-SHIFTED OFFSET SIGNAL S_{IF} WITH HARMONIC OF SIGNAL S1
36
PHASE LOCK RESULTING MIXING PRODUCT TO REFERENCE OSCILLATOR
38

FIGURE 5